

Figure 1 Plasmid pCMV.Bx08.gp160

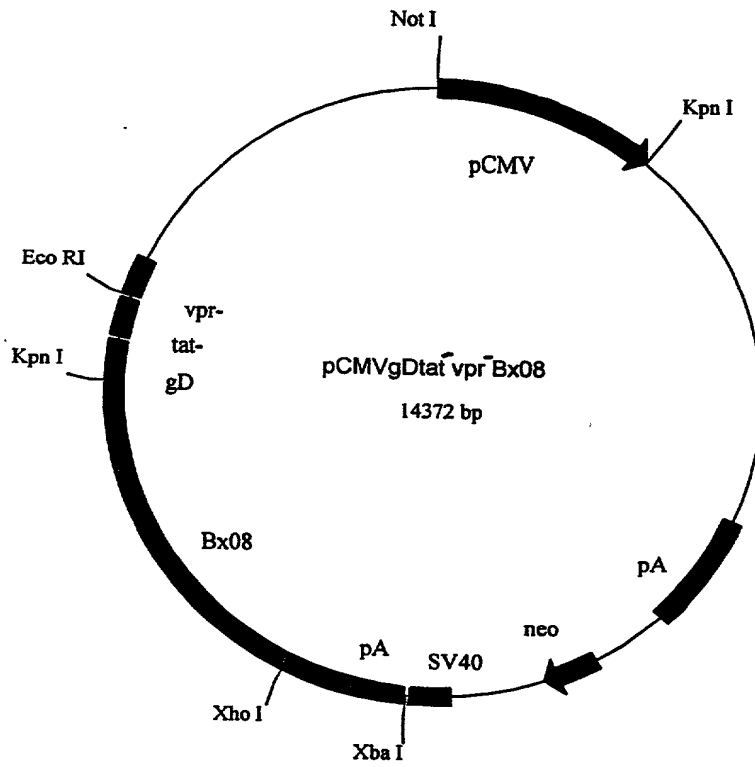


Figure 2 DNA immunization plasmid pCMV3Bx08.

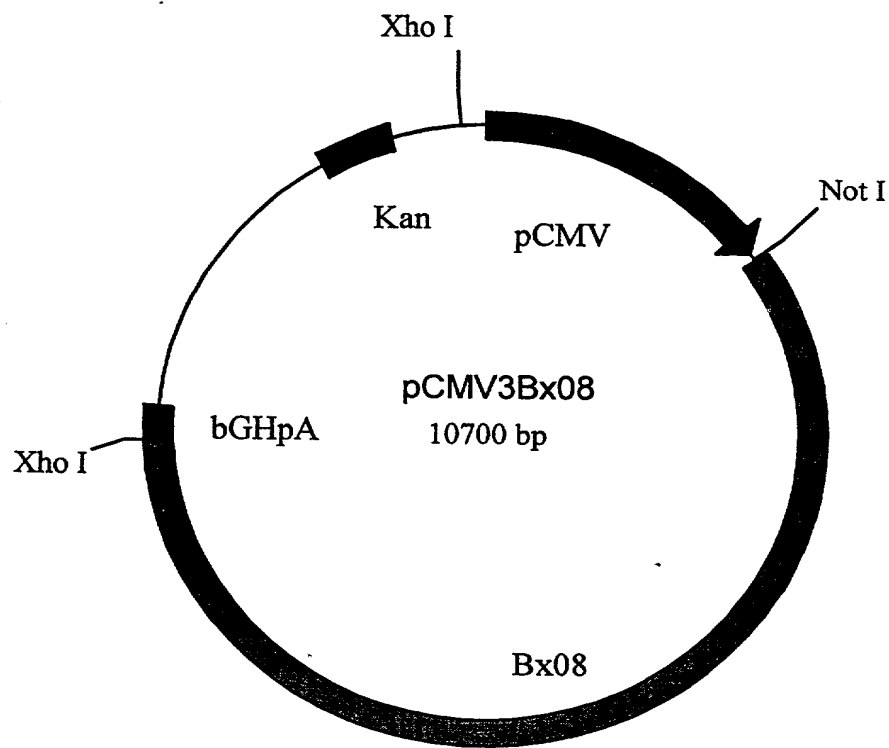


Figure 3. Pseudovirion Expression Plasmid p133B1 HIV-1 Bx08

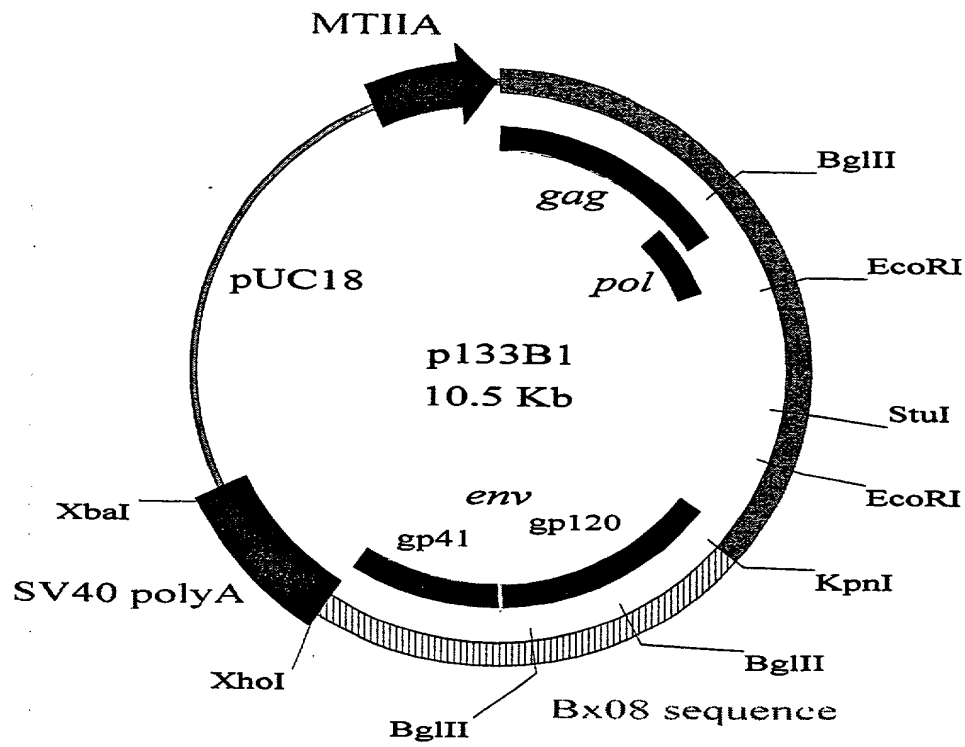
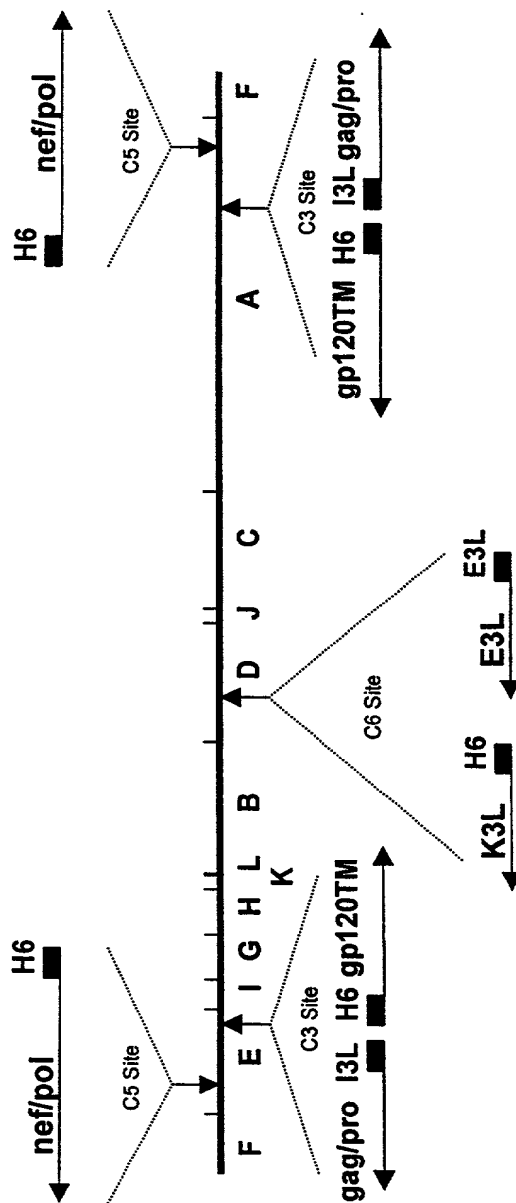


FIGURE 4

ALVAC(2)120(BX08)GNP (vCP1579) (ALVAC XhoI Restriction Map)



A-56
Figure X: Time line of FMC-vaccine 11

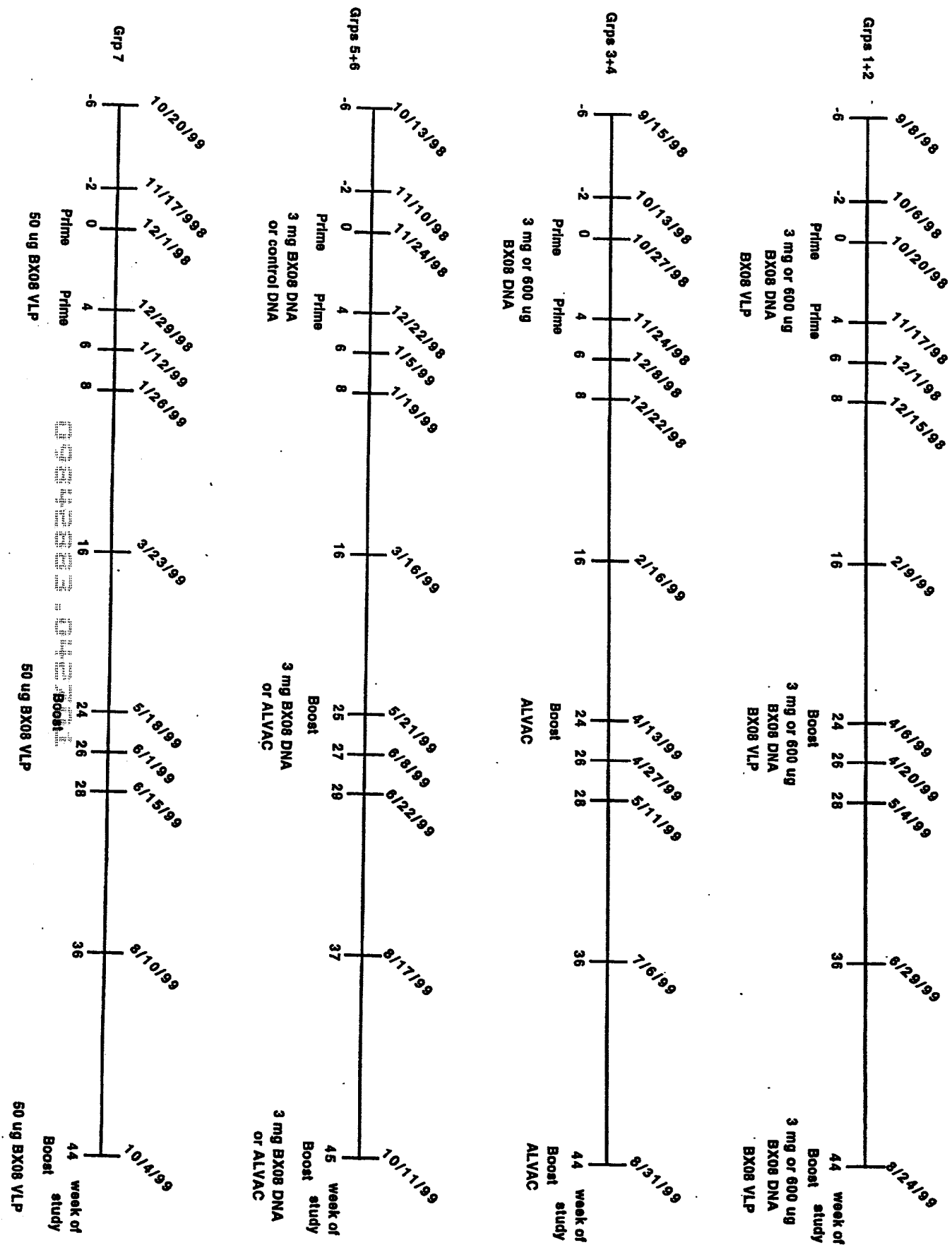
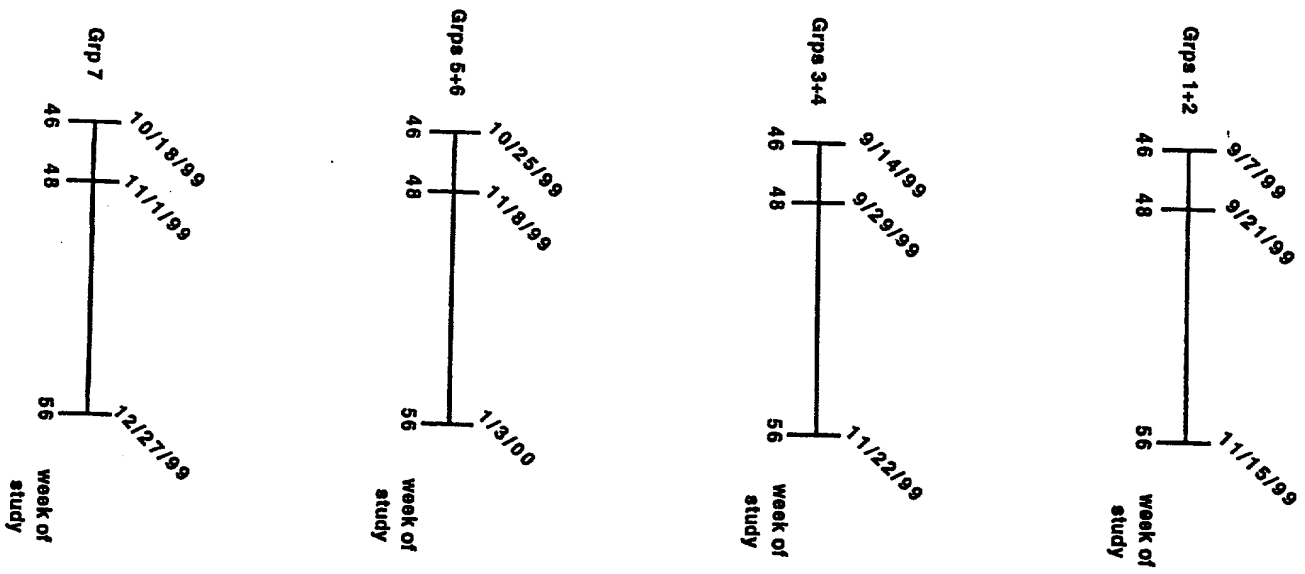
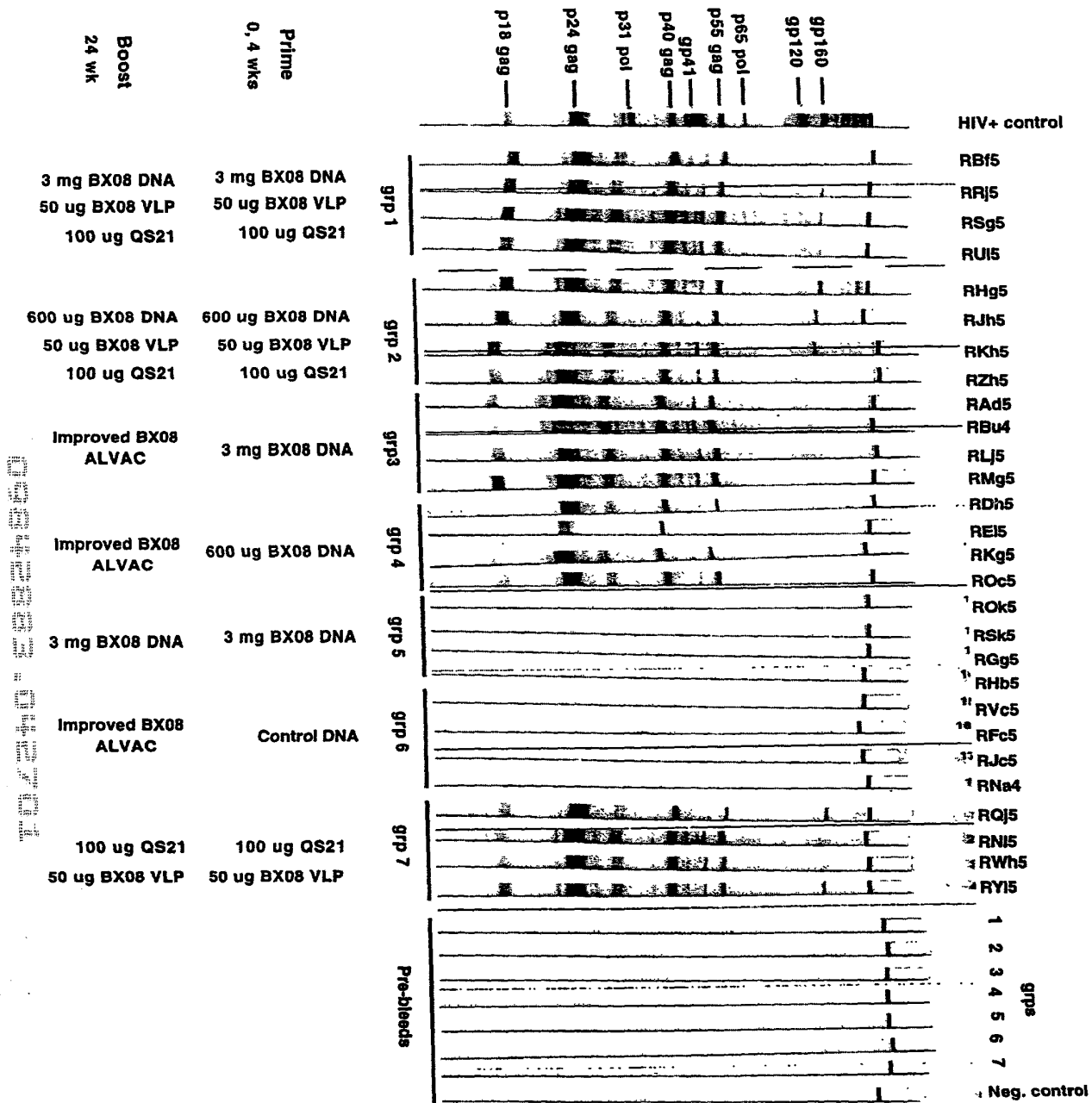


Figure 6 continued



NOTE: The survival curves are based on the assumption that the probability of death is proportional to the number of subjects at risk. The curves are based on the assumption that the probability of death is proportional to the number of subjects at risk.



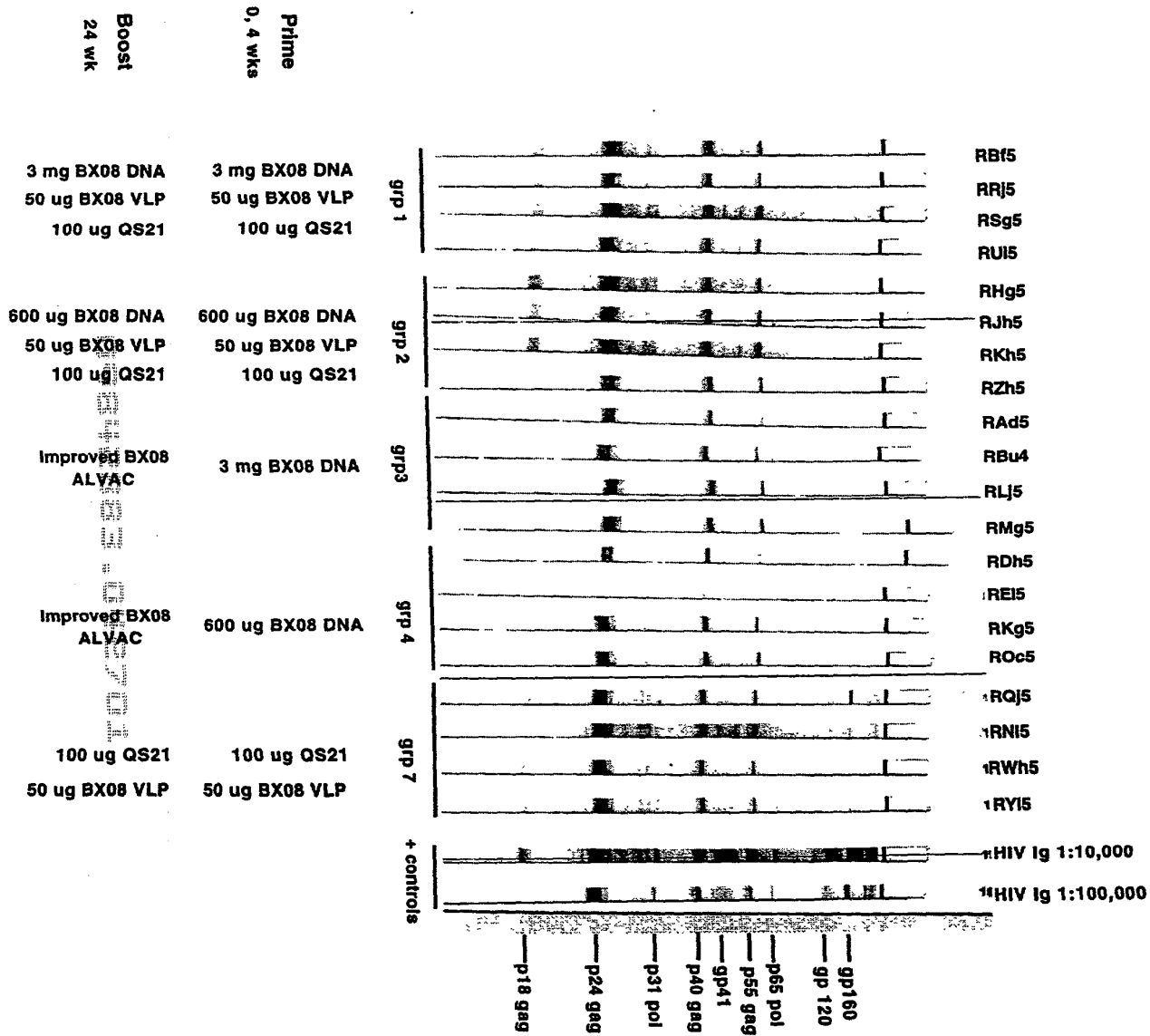
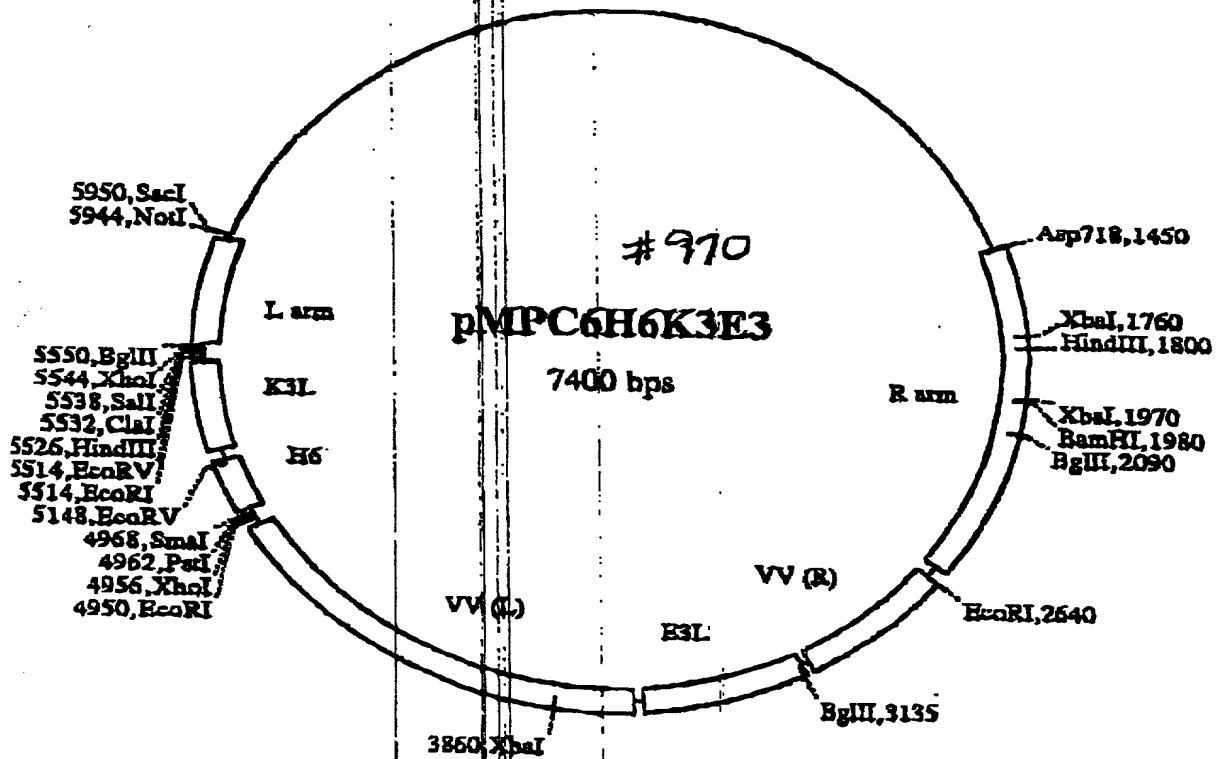


Figure 3. 26 wk macaque serum immunoreactivity to HIV antigens (1:1000 diln)

9/15

7.8

2-14-Pox.R



2-110-HIV

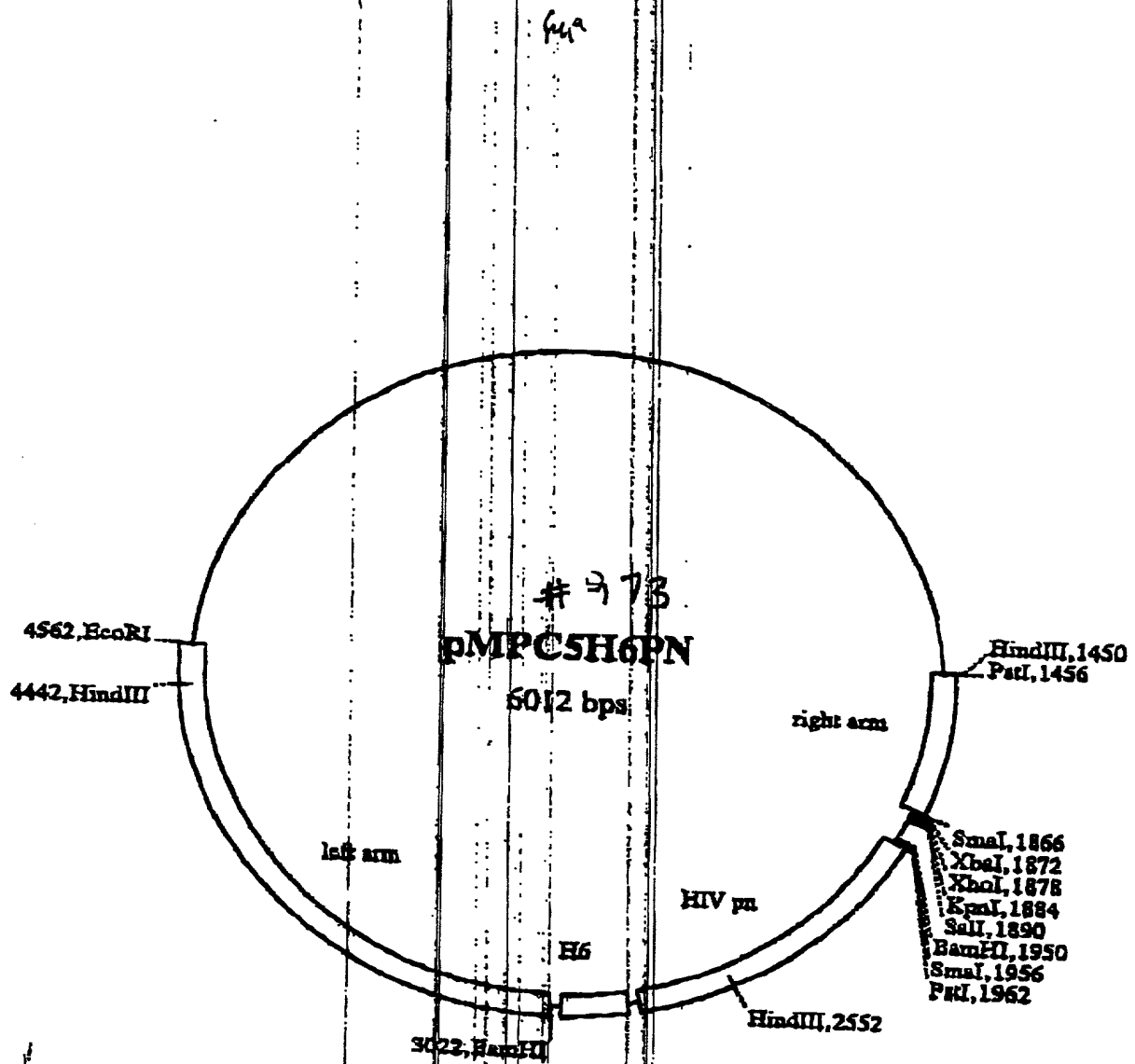


Figure 10 Plasmid pHIV76

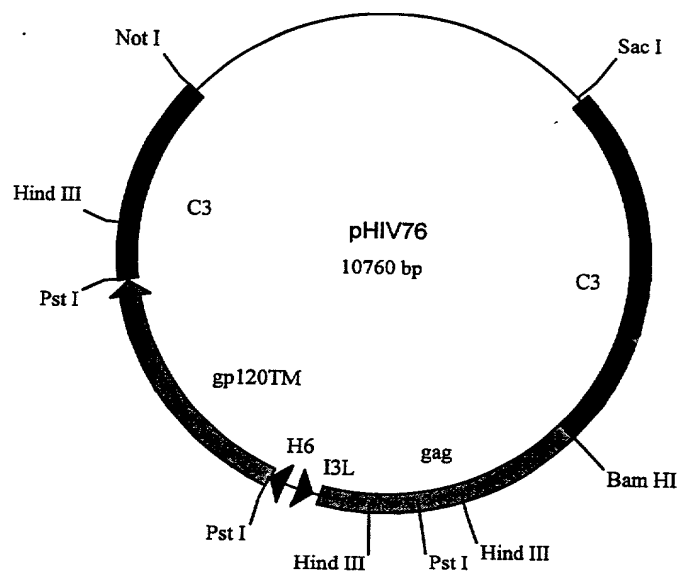


Figure 11

vCP1579: H6/HIV Pol/Nef epitope cassette in ALVAC C5 site

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  1 TTTTTTTCAT TATTTAGAAA TTATGCATTT TAGATCTTTA TAAGCGGCCG TGATTAACATA
 61 GTCATAAAAA CCCGGGATCG ATTCTAGACT CGAGGGTACC GGATCTTAAT TAATTAGTCA
121 TCAGGCAGGG CGAGAACGAG ACTATCTGCT CGTTAATTAA TTAGGTCGAC GGATCCCCCA
181 ACAAAAACTA ATCAGCTATC GGGGTTAATT AATTAGTTAT TAGACAAGGT GAAAACGAAA
241 CTATTTGTTAG CTTAATTAAT TAGAGCTTCT TTATTCTATA CTTAAAAAGT GAAAATAAAT
301 ACAAGGTTC TTAGGGTTG TGTAAATTG AAAGCGAGAA ATAATCATAA ATTATTTTTCAT
361 TATCGCGATA TCCGTTAAGT TTGTATCGTA ATGCCACTAA CAGAAGAAGC AGAGCTAGAA
421 CTGGCAGAAA ACAGAGAGAT TCTAAAAGAA CCAGTACATG GAGTGTATTA TGACCCATCA
481 AAAGACTTAA TAGCAGAAAT ACAGAAGCAG GGGCAAGGCC AATGGACATA TCAAATTTAT
541 CAAGAGCCAT TTAAAAATCT GAAAACAGGA ATGGAGTGGA GATTTGATTC TAGATTAGCA
601 TTTCATCACG TAGCTAGAGA ATTACATCCT GAATATTTTA AAAATTGTAT GGCAATATTC
661 CAAAGTAGCA TGACAAAAAT CTTAGAGCCT TTTAGAAAAC AAAATCCAGA CATAGTTATC
721 TATCAATACA TGGATGATTT GTATGTAGGA TCTGACTTAG AAATAGGGCA GCATAGAACA
781 AAAATAGAGG AGCTGAGACA ACATCTGTTG AGGTGGGGAC TTACAACCAT GGTAGGTTTT
841 CCAGTAACAC CTCAAGTACC TTTAAGACCA ATGACTTACA AAGCAGCTGT AGATCTTTCT
901 CACTTTTTTAA AAGAAAAAGG AGGTTTAGAA GGGCTAATTC ATTCTCAACG AAGACAAGAT
961 ATTCTTGATT TGTGGATTTA TCATACACAA GGATATTTTC CTGATTGGCA GAATTACACA
1021 CCAGGACCAG GAGTCAGATA CCCATTAACC TTTGGTTGGT GCTACAAGCT AGTACCAATG
1081 ATTGAGACTG TACCAGTAAA ATTAAAGCCA GGAATGGATG GCCCAAAAGT TAAACAATGG
1141 CCATTGACAG AAGAAAAAAT AAAAGCATTG GTAGAAATTT GTACAGAGAT GGAAAAGGAA
1201 GGGAAAATTT CAAAAATTGG GCCTTAATTT TTCTGCAGCC CGGGGGATCC TTTTATAGC
1261 TAATTAGTCA CGTACCTTTG AGAGTACCAC TTCAGCTACC TCTTTTGTGT CTCAGAGTAA
1321 CTTTCTTTAA TCAATCCAA AACAG

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Upstream (right) flanking sequence: 1-266

VV H6 promoter: 267-390

HIV pol/nef/pol/nef/pol cassette: 391-1227

Downstream (left) flanking sequence: 1227-1345

Figure 12

E3L and K3L genes in C6

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      10      20      30      40      50      60      70      80      90      100      110
* * * * *
GAGCTCGCGG CCGCCTATCA AAAGTCTTAA TGAGTTAGGT GTAGATAGTA TAGATATTAC TACAAAGGTA TTCATATTTC CTATCAATTC TAAAGTAGAT GATATTAATA
CTCGAGCGCC GCGCGATAGT TTTCAGAAAT ACTCAATCCA CATCTATCAT ATCTATAATG ATGTTTCCAT AAGTATAAAG GATAGTTAAG ATTTCACTCA CTATAATTAT

      120      130      140      150      160      170      180      190      200      210      220
* * * * *
ACTCAAGAT GATGATAGTA GATAATAGAT ACGCTCATAT AATGACTGCA AATTGGGACG GTTCACATTT TAATCATCAC GCGTTCATAA GTTCAACTG CATAGATCAA
TGAGTTTCTA CTACTATCAT CTATTATCTA TCGAGATATA TTACTGACGT TTAAACCTGC CAAGTGTAAG ATTAGTAGTG CGCAAGTATT CAAAGTTGAC GTATCTAGTT

      230      240      250      260      270      280      290      300      310      320      330
* * * * *
AATCTCACTA AAAAGATAGC CGATGTATTT GAGAGAGATT GGACATCTAA CTACGCTAAA GAAATTACAG TTATAAATAA TACATAATGG ATTTTGTAT CATCAGTTAT
TTAGAGTGAT TTTTCTATCG GCTACATAAA CTCTCTTAA CCTGTAGATT GATGCGATTT CTTTAATGTC AATATTTATT ATGTATTACC TAAACAATA GTAGTCAATA

      340      350      360      370      380      390      400      410      420      430      440
* * * * *
AATTACATA AGTACAATAA AAAGATTAA ATAAAAATAC TTACTTACGA AAAAATGACT AATTAGCTAT AAAAACCCAG ATCTCTCGAG GTGACGGTA TCGATAAGCT
TAAATGTAT TCATGTATTT TTTCATAATT TATTTTATG AATGAATGCT TTTTACTGA TTAATCGATA TTTTGGGTC TAGAGAGCTC CAGCTGCCAT AGCTATTGCA

      450      460      470      480      490      500      510      520      530
* * * * *
TGATATCGAA TTCATAAAAA TT A TTG ATG TCT ACA CAT OCT TTT GTA ATT GAC ATC TAT ATA TCC TTT TGT ATA ATC AAC TCT AAT CAC TTT
ACTATAGCTT AAGTATTTTT AA T AAC TAC AGA TGT GTA GGA AAA CAT TAA CTG TAG ATA TAT AGG AAA ACA TAT TAG TTG AGA TTA GTG AAA
      <Q H R C M R K Y N V D I Y G K T Y D V R I V K
-----K3L-----

      540      550      560      570      580      590      600      610      620
* * * * *
AAC TTT TAC AGT TTT CCC TAC CAG TTT ATC CCT ATA TTC AAC ATA TCT ATC CAT ATG CAT CTT AAC ACT CTC TGC CAA GAT AGC TTC AGA
CAC TCC TAT CAG TTT TTC TAT TTA CAT ATC TCG TAT TAG GAA GAG CAT ATG AGA CGG GAA ATA ATG TAG CGG GCG TAA CCC GTT GCT TAT
      <V K V T K G V L K D R Y E V Y R D M H M K V S E A L I A E S
-----K3L-----

      630      640      650      660      670      680      690      700      710
* * * * *
GTG AGG ATA GTC AAA AAG ATA AAT GTA TAG AGC ATA ATC CTT CTC GTA TAC TCT GCC CTT TAT TAC ATC GCC GCG ATT GGG CAA CGA ATA
CAC TCC TAT CAG TTT TTC TAT TTA CAT ATC TCG TAT TAG GAA GAG CAT ATG AGA CGG GAA ATA ATG TAG CGG GCG TAA CCC GTT GCT TAT
      <H P Y D F L Y I Y L A Y D K E Y V R G K I V D G A N P L S Y
-----K3L-----

      720      730      740      750      760      770      780      790      800      810
* * * * *
ACA AAA TGC AAG CAT ACG ATACAACTT AACGGATATC GCGAATATGA AATAATTTAT GATTATTTCT CGCTTTCAT TTAACACAAC CCTCAAGAAC
TGT TTT ACG TTC GTA TGC TATGTTTGAA TTGCTATAG CGCTATTACT TTATTAAATA CTAATAAAGA GCGAAGTTA AATTGTGTTG GGAGTTCTTG
      <C F A L M
-----K3L-----

      820      830      840      850      860      870      880      890      900      910      920
* * * * *
CTTTGTATTT ATTTTCACCT TTAAAGTATA GAATAAAGAA AGCTCTAATT AATTAAATGAA CAGATTGTTT CGTTTTCCTC TTGGCGTATC ACTAATTAA TAAACCGGCG
GAAACATAAA TAAAGTGAA AAATTCATAT CTATTTCCT TCGAGATTAA TTAATTACTT GTCTAACAAA GCAAAAGGGG AACCAGCATG TGATTAATTA ATTGGCCCGC

      930      940      950      960      970      980      990      1000      1010      1020      1030
* * * * *
TGCAGCTCGA GGAATTCAAC TATATCGACA TATTCTCAIT GTATACACAT AACCATTTACT AACGTAGAAT GTATAGGAAG AGATGTAACG GGAACAGGGT TTGTTGATTC
ACGTGCGACT CCTTAAGTTG ATATAGCTGT ATAAAGTAAA CATATGTGTA TTGGTAATGA TTGCATCTTA CATATCTTTC TCTACATTGC CCTTGTCCCA AACAACTAAG

      1040      1050      1060      1070      1080      1090      1100      1110      1120      1130      1140
* * * * *
GCAAACTATT CTAATACATA ATTCITCTGT TAATACGTCT TGCAGGTAAT CTATTATAGA TGCCAAGATA TCTATATAAT TATTTGTAA GATGATGTTA ACTATGTGAT
CGTTTGATAA GATTATGTAT TAAGAAGACA ATTATGCAGA ACGTGCAATTA GATAATATCT ACGGTTCTAT AGATATATTA ATAAACACT CTACTACAA TGTATACATA

      1150      1160      1170      1180      1190      1200      1210      1220      1230      1240      1250
* * * * *
CTATATAAGT AGTGAATAA TTCAATGATT TCGATATATG TTCCAACCTCT GTCTTTGTA TGTCTAGTTT CGTAATATCT ATAGCATCCT CAAAATATAT ATTGCGATAT
GATATATTCA TCACATATT AAGTACATA AGCTATATAC AAGGTGAGA CAGAAACAT ACAGATACAA GCATTATAGA TATCGTAGGA GTTTTATTATA TAAGCGTATA

      1260      1270      1280      1290      1300      1310      1320      1330      1340      1350      1360
* * * * *
ATTCCCAAGT CTTCACTTCT ATCTCTTAAA AAATCTTCAA CGTATGGAAT ATAATAATCT ATTTACCTCT TTCTGATATC ATTAATGATA TAGTTTTTGA CACTATCTTC
TAAGGGTTCA GAAGTCAAGA TAGAAGATT TTTAGAAGTT GCATACCTTA TATTATTAGA TAAATGGAG AAGACTATAG TAATTACTAT ATCAAAACT GTGATAGAAG

      1370      1380      1390      1400      1410      1420      1430      1440      1450      1460      1470
* * * * *
TGTCAATTGA TTCTATTCA CTATATCTAA GAAACGATA GCGTCCCTAG GACGAACATC TGCCATTAAAT ATCTCTATTA TAGCTTCTGG ACATAATCA TCTATTATAC
ACAGTTAACT AAGAATAAGT GATATAGATT CTTTGCTTAT CCGAGGATC CTGCTTGATG ACGGTAATTA TAGAGATAAT ATCGAAGACC TGTATTAGT AGATAATATG

      1480      1490      1500      1510      1520      1530      1540      1550      1560      1570      1580
* * * * *
CAGAATTAAT GSGAACTATT CCGTATCTAT CTAACATAGT TTTAAGAAAG TCAGAATCTA AGACCTGATG TTCTATATTT GGTTCATACA TGAATGATC TCTATTGATG
GTCTTAATTA CCCTTGATAA GGCATAGATA GATTGTATCA AAATCTTTTC AGCTTAGAT TCTGGACTAC AAGTATATAA CCAAGTATGT ACTTTACTAG AGATAACTAC

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      1590      1600      1610      1620      1630      1640      1650      1660      1670      1680      1690
ATAGTACTA TTTCAATCTC TGAATAATGG TAACTCAATC TATATATGCT TTCCTTGTGT ATGAAGGATA GAATATACTC AATAGAATTG GTACCAACAA ACTGTTCTCT
TATCACTGAT AAAAGTAAGAG ACTTTTAACC ATTGAGTAAG ATATATACGA AAGGAACAAC TACTTCTAT CTTATATGAG TTATCTTAAA CATGGTGTGT TGACAAGAGA

      1700      1710      1720      1730      1740      1750      1760      1770      1780      1790      1800
TATGAATCGT ATATCATCAT CTGAATAAT ATGTAAGGC ATACATTTAA CAATTAGAGA CTGTCTCTCT GTTATCAATA TACTATTCCT GTGATAATTT ATGTGTGAGG
ATACTTAGCA TATAGTAGTA GACTTTATTA GTACATTCGG TATGTAAATT GTTAATCTCT GAACAGAGGA CAATAGTTAT ATGATAAGAA CACTATTAAA TACACACTCC

      1810      1820      1830      1840      1850      1860      1870      1880      1890      1900      1910
CAAAATTTGTC CACGTTCTTT AATTTTGTGA TAGTAGATAT CAAATCCAAT GGAGCTACAG TTCCTGGCTT AAACAGATAT AGTTTTCTGT GAACAAATTC TACAACATTA
GTTTAAACAG GTGCAAGAAA TTAACAACAT ATCATCTATA GTTTAGGTTA CCTCGATGTC AAGAACCAGAA TTTGTCTATA TCACAAAAGAC CTGTTTAAAG ATGTGTGAAT

      1920      1930      1940      1950      1960      1970      1980      1990      2000      2010      2020
TTATAAGGA CTTTGGGTAG ATAAGTGGGA TGAATCCTA TTTTAATPAA TGCTATCGCA TTGTCTCTGT GCAATATATC AAACGCTTTT GTGATAGTAT GGCATTCAAT
AATATTTCCT GAAACCCATC TATTCACCTT ACTTTAGGAT AAAATTAATT ACGATAGCGT AACAGGAGCA CGTTTATAGG TTTGCGAAAA CACTATCATA CGTAAGTAA

      2030      2040      2050      2060      2070      2080      2090      2100      2110      2120      2130
GTCTAGAAAC GCTCTACGAA TATCTGTGAC AGATATCATC TTTAGAGAA ATACTAGTCG CGTTAATAGT ACTACAATTT GTATTTTTTA ATCTATCTCA ATAAAAAAT
CAGATCTTTG CGAGATGCTT ATAGACACTG TCTATAGTAG AAATCTCTTA TATGATCAGC GCAATTATCA TGATGTTAAA CATAAAAAAT TAGATAGAGT TATTTTTTTA

      2140      2150      2160      2170      2180      2190      2200      2210      2220      2230
TAATATGAT GATTCAATGT ATAACATAAC TACTAATCTT TATGATAAC TAGAATCA GAA TCT AAT GAT GAC GTA ACC AAG AAG TTT ATC TAC TGC CAA
ATTATACATA CTAAGTTACA TATTGATTTG ATGATTGACA ATAACATTG ATCTTAGT CTT AGA TTA CTA CTG CAT TGG TTC TTC AAA TAG ATG ACG GTT
<F R I I V Y G L L K D V A L
-----E3L-----

      2240      2250      2260      2270      2280      2290      2300      2310      2320
TTT AGC TGC ATT ATT TTT AGC ATC TCG TTT AGA TTT TCC ATC TGC CTT ATC GAA TAC TCT TCC GTC GAT GTC TAC ACA GGC ATA AAA TGT
AAA TCG ACG TAA TAA AAA TCG TAG AGC AAA TCT AAA AGG TAG ACG GAA TAG CTT ATG AGA AGG CAG CTA CAG ATG TGT CCG TAT TTT ACA
<K A A N N K A D R K S K G D A K D F V R G D I D V C A Y F T
-----E3L-----

      2330      2340      2350      2360      2370      2380      2390      2400      2410
AGG AGA GTT ACT AGG CCC AAC TGA TTC AAT ACG AAA AGA CCA ATC TCT TCT TAT TAT TTT GCA GTA CTC ATT AAT AAT GGT GAC AGG GTT
TCC TCT CAA TGA TCC GGG TTG ACT AAG TTA TGC TTT TCT GGT TAG AGA GAA TCA ATA AAC CGT CAT GAG TAA TTA CCA CTG TCC CAA
<P S N S P G V S E I R F S W D R K T I Q C Y E N I I T V P N
-----E3L-----

      2420      2430      2440      2450      2460      2470      2480      2490      2500
AGC ATC TTT CCA ATC AAT AAT TTT TTT AGC CGG AAT AAC ATC ATC AAA AGA CTT ATG ATC CTC TCT CAT TGA TTT TTC GCG GGA TAC ATC
TCG TAG AAA GGT TAG TTA TTA AAA AAA TCG GCC TTA TTG TAG TAG TTT TCT GAA TAC TAG GAG AGA GMA ACT AAA AAG CGC CCT ATG TAG
<A D K W D I I K X A P I V D D F S K H D E R M S K E R S V D
-----E3L-----

      2510      2520      2530      2540      2550      2560      2570      2580      2590
ATC TAT TAT GAC GTC AGC CAT AGC ATC AGC ATC CGG CTT ATC CGC CTC CGT TGT CAT AAA CCA ACG AGG AGG AAT ATC GTC GGA GCT GTA
TAG ATA ATA CTG CAG TCG GTA TCG TAG TCG TAG GCC GAA TAG GCC GAG GAG ACA GAA TTT GGT TGC TCC TCC TTA TAG CAG CCT CGA CAT
<D I I V D A M A D A D P K D A E T T M F W R P P I D D S S Y
-----E3L-----

      2600      2610      2620      2630      2640      2650      2660      2670      2680
CAC CAT AGC ACT ACG TTG AAG ATC GTA CAG AGC TTT ATT AAC TTC TCG CTT CTC CAT ATT AAG TTG TCT AGT TAG TTG TGC AGC AGT AGC
GTG TAG TCG TGA TGC AAC TTC TAG CAT GTC TCG AAA TAA TTG AAG AGC GAA GAG GTA TAA TTC AAC AGA TCA ATC AAC ACG TCG TCA TCG
<V M A S R Q L D Y L A K N V E R K E M N L Q R T L Q A A T A
-----E3L-----

      2690      2700      2710      2720      2730      2740      2750      2760      2770
TCC TTC GAT TCC AAT GTT TTT AAT AGC CGC ACA CAC AAT CTC TGC GTC AGA ACG CTC GTC AAT ATA GAT CTT AGA CAT TT TTAGAGAGAA
AGG AAG CTA AGG TTA CAA AAA TTA TCG GCG TAT TGT GTG TTA GAG ACG CAG TCT TGC GAG CAG TTA TAT CTA GAA TCT GTA AA AATCTCTCT
<G E I G I N K I A A C T V I E A D S R E D I Y I K S M
-----E3L-----

      2780      2790      2800      2810      2820      2830      2840      2850      2860      2870      2880
CTAACACAAC CAGCAATAAA ACTGAACCTA CTTTATCAT TTTTATTTCA TCATCTCTGT GTGGTTCGTC GTTCTTATCG AATGTAGCTC TGATTAACCC GTCATCTATA
GATTGTGTGT GTGTTTATTT TGACTTGGAT GAAATAGTAA AAAAATAAGT AGTAGAGAC CACCAAGCAG CAAAGATAGC TTACATCGAG ACTAATTGGG CAGTAGATAT

      2890      2900      2910      2920      2930      2940      2950      2960      2970      2980      2990
GGTGATGCTG GTTCTGGAGA TTCTGGAGGA GATGGATTAT TATCTGGAAG AATCTCTGTT ATTCTCTTGT TTTCTATGAT CGATTGCGTT GTAACATTAA GATTGCGAAA
CCACTACGAC CAAGACCTCT AAGACCTCTT CTACCTAATA ATAGACCTTC TAGAGACAAA TAAAGGAACA AAAGTACATA GCTAACGCAA CATTGTAAAT CTAACGCTTT

      3000      3010      3020      3030      3040      3050      3060      3070      3080      3090      3100
TGCTCTAAAT TTGGGAGGCT TAAAGTGTG TTTGCAATCT CTACACGCGT GTCTAACTAG TGGAGGTTG TCAGCTGCTC TAGTTTGAAT CATCATCGGC GTAGTATTCC
ACGAGATTTA AACCTCCGA ATTTCAACAC AAACGTTAGA GATGTGCGCA CAGATTGATC ACCTCCAAGC AGTCGACGAG ATCAAACTTA GTAGTAGCCG CATCATAAGG

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      3110      3120      3130      3140      3150      3160      3170      3180      3190      3200      3210
      * * * * *
TACTTTTACA GTTAGGACAC GGTGTATTGT ATTTCTCTGC GAGAAGCTTA AAATAATCGT TGTAAGTCAC ATCCTTTATT TTATCTATAT TGTATTCTAC TCCTTTCTTA
ATGAAAATGT CAATCCTGTG CCACATAACA TAAAGAGCAG CTCTTGCAAT TTTATTAGCA ACATTGAGTG TAGGAAATAA AATAGATATA ACATAGAGTG AGGAAAGAT

      3220      3230      3240      3250      3260      3270      3280      3290      3300      3310      3320
      * * * * *
ATGCATTTTA TACCGAATAA GAGATAGCGA AGGAATTCCT TTTATTGATT AACTAGTCAA ATGAGTATAT ATAATTGAAA AAGTAAAAATA TAAATCATAT AATAATGAAA
TACGTAAAAA ATGGCTTATT CTCTATCGCT TCCTTAAGAA AAATAACTAA TTGATCAGTT TACTCATATA TATTAACTTT TTCATTTTAT ATTTAGTATA TTATTACTTT

      3330      3340      3350      3360      3370      3380      3390      3400      3410      3420      3430
      * * * * *
CGAAATATCA GTAATAGACA GGAAGTCGCA GATTCTTCTT CTAATGAAGT AAGTACTGCT AAATCTCCAA AATTAGATAA AAATGATACA GCAAAATACAG CTTCAATCAA
GCTTTATAGT CATTATCTGT CCTTGACCGT CTAAGAAGAA GATTACTTCA TTCATGACGA TTGAGAGGTT TTAATCTATT TTACTATGT CGTTTATGTC GAAGTAAGTT

      3440      3450      3460      3470      3480      3490      3500      3510      3520      3530      3540
      * * * * *
CGAATTACCT TTTAATTTTTC TCAGACACAC CTTATTACAA ACTAACTAAG TCAGATGATG AGAAAGTAAA TATAAATTTA ACTTATGGGT ATAATATAAT AAAGATTCAAG
GCTTAATGGA AAATTAAGAA AGTCTGTGTG GAATAATGTT TGATTGATTC AGTCTACTAC TCCTTCATTT ATATTTAAT TGAATACCCA TATTATATTA TTCTAAGTA

      3550      3560      3570      3580      3590      3600      3610      3620      3630      3640      3650
      * * * * *
GATATTAAAT ATTTACTTAA CGATGTTAAT AGACTTATTC CATCAACCCC TTCAAACCTT TCTGGATATT ATAAAAATACC AGTTAATGAT ATTAAAAATG ATTTGTTAAG
CTATAATTAT TAAATGAATT GCTACAATTA TCTGAATAAG GTAGTTGGGG AAGTTTGGA AGACCTATAA TATTTTATGG TCAATTACTA TAATTTTATC TAACAAATTC

      3660      3670      3680      3690      3700      3710      3720      3730      3740      3750      3760
      * * * * *
AGATGTAAGT AATTATTTCG AGTAAAGGA TATAAAATTA GTCTATCTTT CACATGGAAA TGAATTACCT AATATTAAAT ATTATGATAG GAATTTTITA GGATTATCAAG
TCTACATTTA TTAATTAACC TCCATTTCCT ATATTTTAAT CAGATAGAAA GTGTACCTTT ACTTAATGGA TTATAATTAT TAATACTATC CTTAAAAAAT CCTAAATGTC

      3770      3780      3790      3800      3810      3820      3830      3840      3850      3860      3870
      * * * * *
CTGTATATG TATCAACAAT ACAGGCAGAT CTATGGTAT GGTAAACAC TGTAACGGGA AGCAGCATTC TATGGTAAC TGGCTATGTT TAATAGCCAG ATCATTTTAC
GACAATATAC ATAGTTGTTA TGTCCTCTTA GATACCAATA CCATTTTGTT ACATTGCCCT TCGTCGTAG ATACCATTTGA CCGGATACAA ATTATCGGTC TAGTAAATG

      3880      3890      3900      3910      3920      3930      3940      3950      3960      3970      3980
      * * * * *
TCTATAAACA TTTTACACA AATAATAGGA TCCTCTAGAT ATTTAATAT ATATCTAACA ACAACAAAAA AATTTAACGA TGTATGGCCA GAAGTATTTT CTACTAATAA
AGATAATTGT AAAATGGTGT TTATTATCCT AGGAGATCTA TAAATTATAA TATAGATTGT TGTGTGTTTT TTAATATGCT ACATACCGGT CTTCAATAAA GATGATTATT

      3990      4000      4010      4020      4030      4040      4050      4060      4070      4080      4090
      * * * * *
AGATAAGAT AGTCTATCTT ATCTACAAGA TATGAAAGAA GATAATCATT TAGTAGTAGC TACTAATATG GAAAGAAATG TATACAAAAA CGTGGAGGCT TTTTATTATA
TCTATTCTTA TCAGATAGAA TAGATGTTCT ATACTTTCTT CTATTAGTAA ATCATCATCG ATGATTATAC CTTTCTTTAC ATATGTTTTT GCACCTTCGA AATATAATT

      4100      4110      4120      4130      4140      4150      4160      4170      4180      4190      4200
      * * * * *
ATAGCATATT ACTAGAAGAT TTAATACTTA GACTTAGTAT AACAAAACAG TTAATGCCA ATATCGATTC TATATTTTCA TATAACAGTA GTACATTAAT CAGTGATATA
TATCGTATAA TGATCTTCTA AATTTTAGAT CTGAATCATA TTGTTTTGTC AATTTACGGT TATAGCTAAG ATATAAAGTA GTATTGTCA CATGTAATTA GTCATATAT

      4210      4220      4230      4240      4250      4260      4270      4280      4290      4300      4310
      * * * * *
CTGAAACGAT CTACAGACTC AACTATGCAA GGAATAAGCA ATATGCCAAT TATGTCATAT ATTTTAACCT TAGAACTAAA ACGTTCTACC AATACTAAAA ATAGGATACG
GACTTTGCTA GATGTCTGAG TTGATACGTT CCTTATTCTG TATACGGTTA ATACAGATTA TAAATTTGAA ATCTTGATTT TGCAAGATGG TTATGATTTT TATCCTATGC

      4320      4330      4340      4350      4360      4370      4380      4390      4400      4410      4420
      * * * * *
TGATAGGCTG TTAAGAGCTG CAATAAATAG TAAGGATGTA GAAGAAATAC TTTGTTCTAT ACCTTCCGAG GAAAGAACTT TAGAACAACT TAAGTTTAAT CAAACTTGTA
ACTATCCGAC AATTTTCGAC GTTATTTATC ATCTCTACAT CTTCTTTATG AAACAAGATA TGGAGGCTTC CTTTCTTGAA ATCTTGTTGA ATTCAAATTA GTTTGAACAT

      4430
      * *
TTTATGAAGG TACC
AAATACTTCC ATGG

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